

CLAIMS:

1. An apparatus for the use of drilling or producing from a well bore, the apparatus comprising a downhole member capable of being attached to a tubular, means for rotating the tubular, control means for controlling the rotation of said tubular in order to transmit information along said tubular and means for monitoring the rotation of said tubular and for decoding said information transmitted along said tubular such that a magnitude of a parameter can be determined from the rotation of said tubular.
2. The apparatus of claim 1, wherein the control means is configured to control the rotational velocity or frequency of the tubular.
3. The apparatus of claim 1, wherein the control means is configured to stop the rotation of the tubular for a predetermined time.
4. The apparatus of claim 3, wherein the monitoring means is configured to measure the time of non-rotation of the tubular.
5. The apparatus of claim 3, wherein the monitoring means is configured to measure the time over which the tubular is continuously rotating.
6. The apparatus of claim 5, wherein the monitoring means is configured to measure the time over which the tubular is continuously rotating at a particular rotational speed.
7. The apparatus of claim 1, wherein the monitoring means is configured to count the number of rotations of the tubular.
- ✓ 8. The apparatus of claim 1, wherein the monitoring means comprises a magnet.
- ✓ 9. The apparatus of claim 1, wherein the monitoring means comprises at least one of a radioactive or sonic source.

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10. The apparatus of claim 1, wherein the monitoring means comprises a gravitational accelerometer configured to detected alternating variations in the gravitational field due to rotation of the tubular.

11. The apparatus of claim 1, wherein said drilling member comprises:

a hollow rotatable mandrel having a concentric longitudinal bore;

an inner sleeve rotatably coupled about said mandrel, said inner sleeve having an eccentric longitudinal bore of sufficient diameter to allow free relative motion between said mandrel and said inner sleeve;

an outer housing having an outer surface, said outer housing is rotatably coupled around said inner eccentric sleeve, said outer housing having an eccentric longitudinal bore forming a weighted side adapted to automatically seek the low side of the wellbore and having sufficient diameter to allow free relative motion between said inner sleeve and

a plurality of stabilizer shoes longitudinally attached to or formed integrally with said outer surface of said outer housing;

drive means for selectively rotating said inner eccentric sleeve with respect to said outer housing and

logic means for controlling said drive means based on the information transmitted along said drill string.

✓ 12. An apparatus for transmitting information in a timely manner from the face of the Earth to a downhole assembly, whereby the rotation of the drill string is used as an output device, conveying information to components which are located in the wellbore, the apparatus comprising:

a device which is closely coupled to either the drill string, or a non-rotating sub assembly, which emits a signal or influences its environment such that the rotation of the drillstring is used to activate a sensor means which may be integrated into either the drill string, or a non-rotating sub-assembly with a timing device such that the sensor outputs derived from the rotation of the drillstring system may be measured against a time-based system such that meaningful encoding may be accomplished, which may be coupled to an actuation or switching mechanism or mechanisms.

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- ✓ 13. The apparatus of claim 12, wherein the emitter or device influencing the environment comprises a magnet or a magnetic device.
- ✓ 14. The apparatus of claim 12, wherein the emitter or device influencing the environment comprises a mechanical switch which is activated by the rotation of the drill string.
- ✓ 15. The apparatus of claim 12, wherein the emitter or device influencing the environment comprises at least one of a sonic or radioactive source.
16. A method of transmitting information along a tubular to a downhole member located within a well bore, the method comprising the steps of:
rotatably driving said tubular, wherein the rotation of said tubular is controlled accordance with information which is to be transmitted along said tubular;
monitoring the rotation of said tubular; and
analysing the monitored rotation of said tubular such that a magnitude of a parameter can be determined from the rotation of said tubular.
17. The method of claim 16, wherein the step of monitoring the rotation of said tubular comprises the step of monitoring the rotational velocity of the tubular.
18. The method of claim 16, wherein the step of monitoring the rotation of the tubular comprises the step of timing a period of non-rotation of the tubular.
19. The method of claim 16, wherein the step of driving the tubular comprises the step stopping the rotation of the tubular for a pre-determined time determined by the information which is to be transmitted along the tubular.
20. The method of claim 16, wherein the step of monitoring the rotation of the tubular comprises the step of measuring the time over which the tubular is continuously rotating at a particular frequency.